

**Before the  
FEDERAL COMMUNICATIONS COMMISSION  
Washington, D.C. 20554**

In the Matter of	)	
	)	
Expanding Flexible Use of the 3.7 to 4.2 GHz Band	)	GN Docket No. 18-122
	)	
Expanding Flexible Use in Mid-Band Spectrum Between 3.7 and 24 GHz	)	GN Docket No. 17-183
	)	(Inquiry Terminated as to 3.7-4.2 GHz)
	)	
Petition for Rulemaking to Amend and Modernize Parts 25 and 101 of the Commission's Rules to Authorize and Facilitate the Deployment of Licensed Point-to-Multipoint Fixed Wireless Broadband Service in the 3.7-4.2 GHz Band	)	RM-11791
	)	
Fixed Wireless Communications Coalition, Inc., Request for Modified Coordination Procedures in Band Shared Between the Fixed Service and the Fixed Satellite Service	)	RM-11778
	)	

**COMMENTS OF EUTELSAT S.A.**

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## SUMMARY

Eutelsat S.A. (“Eutelsat”) strongly supports the proposal of the C-band Alliance to employ a secondary market approach to expeditiously make available a significant portion of the 3.7-4.2 GHz band for terrestrial wireless services. Eutelsat joined the C-band Alliance after receiving assurances from the other C-band satellite operators that the C-band Alliance’s proposal is intended to reserve sufficient spectrum in the 3.7-4.2 GHz band for C-band satellite services and that mechanisms would be available to increase the throughput capacity of the remaining C-band satellite spectrum. As a result, Eutelsat is now confident that its customers will continue to receive the same supply and quality of C-band satellite services following the completion of the repacking process.

Eutelsat required such assurance because satellite communications services provided using the C-band remain by far the most cost effective and efficient means to distribute large amounts of video programming and other data-intensive services over large geographic areas, while ensuring a very high level of availability and reliability. C-band satellite services are particularly important in rural and remote areas where fiber capacity is usually unavailable. Eutelsat’s customers therefore often do not have any options with respect to fulfilling their critical communications needs and the Commission must therefore ensure that these customers can continue to rely on C-band satellite services in the future.

The Notice of Proposed Rulemaking (“*NPRM*”) explores at length the various competing economic incentives that could be relevant to the use of a secondary market process for the reconfiguration of the lower portion of the 3.7-4.2 GHz band. This economic analysis supports a conclusion that the C-band satellite operators possess an appropriate balance of competing economic interests to ensure that as much spectrum as possible is made available for terrestrial

wireless services, while preserving sufficient spectrum capacity for existing and future users of C-band satellite services, thus producing an economically efficient result.

Consistent with this, the Commission should refrain from imposing significant regulatory requirements on the secondary market process to be used by C-band satellite operators to make the lower portion of the 3.7-4.2 GHz band available for terrestrial wireless services. Instead, the Commission should permit the C-band satellite operators to act as the Transition Facilitator, including establishing the C-band Alliance, its membership, and implementing procedures for the secondary market process.

The Commission should refrain from attempting to implement an auction approach to reassign spectrum rights in the lower portion of the 3.7-4.2 GHz band. The *NPRM* identifies several different possibilities and appears to appropriately conclude that each such option has significant flaws and would be unworkable. Further, efforts to create a new auction framework from scratch would create substantial delay that can best be avoided by authorizing the C-band Alliance to complete the secondary market approach that they are already preparing to implement.

Finally, the Commission should lift its freeze on applications for new C-band satellites and earth stations. As the *NPRM* acknowledges, C-band satellite services continue to provide by far the best means for wide-area video distribution and other critical communications services. Therefore, the Commission should not preclude the provision of C-band satellite services to new users, or the increased use of such services by existing customers. Any concerns about possible speculation can be avoided by indicating that any licensees for C-band satellites and earth stations granted after the freeze is lifted will not be eligible for reimbursement of their reconfiguration expenses or protected from interference resulting from terrestrial mobile operations unless the new satellites or earth stations are needed to facilitate the repacking process.

Such actions by the Commission will further the public interest significantly by enabling the expeditious conversion of a significant portion of the 3.7-4.2 GHz band for terrestrial wireless services, while ensuring that C-band satellite operators can continue to provide important communications services to existing and future customers.

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**COMMENTS OF EUTELSAT S.A.**

As the Commission is aware, Eutelsat S.A. (“Eutelsat”) approached the proposed repacking of the 3.7-4.2 GHz band with considerable caution. As Eutelsat explained in its previous comments to the Commission, the C-band remains critically important to Eutelsat’s customers for essential communications services such as the dissemination of news and informational programming, operational logistics for remote energy extraction, and providing broadband access for isolated communities. C-band satellite services provide highly reliable coverage of large geographic areas with minimal rain attenuation. As such, C-band satellite services often cannot be replaced in an effective or economical manner using other communications technologies or frequency bands.

Eutelsat therefore required assurance from the proponents of the repacking, *i.e.*, Intelsat and SES, that a sufficient portion of the 3.7-4.2 GHz band is intended to be retained for satellite communications services in the United States and that measures would be available to increase the throughput capacity of that remaining C-band spectrum. Based on these assurances, Eutelsat is now confident that the C-band satellite communications needs of Eutelsat's customers will continue to be satisfied following the repacking process. .

As explained in the joint comments of the C-band Alliance, new satellite capacity and innovative technical solutions will be developed to increase the frequency reuse of the C-band and maintain supply and quality of service in the continental United States ("CONUS") so that customers currently using all or most of the existing 500 MHz of C-band downlink spectrum can achieve the same throughput post-repacking using additional earth stations pointed at the newly launched satellites.

The C-band Alliance members have additionally agreed to other measures to increase the throughput and efficiency of the remaining C-band spectrum. For example, the Alliance members will have the ability to lease from each other C-band satellite transponders that have CONUS coverage, thus potentially expediting the repacking process. Further, once new satellites capacity is in place, Eutelsat and Telesat will have the ability to lease or acquire resource on this new capacity, thus ensuring that the communications needs of its customers continue to be fulfilled. Importantly, all of these measures deemed reasonable and necessary to maintain an adequate supply of C-band satellite capacity will be appropriately identified as expenses that are necessary to preserve sufficient supply and quality of service in the remaining C-band satellite spectrum and will therefore be eligible for reimbursement from the secondary markets proceeds.

Given these facts, Eutelsat was able to join the C-band Alliance with confidence that the repacking of the 3.7-4.2 GHz band can be completed in an efficient and expeditious manner that provides significant additional spectrum resources for mobile wireless services in the United States while concurrently preserving sufficient C-band satellite capacity to support the critical services that Eutelsat and other C-band satellite operators provide to our customers. Eutelsat therefore urges the Commission to reach this same conclusion and endorse the proposal of the C-band Alliance.

**I. EUTELSAT JOINED THE C-BAND ALLIANCE BECAUSE A MARKET BASED APPROACH WILL PRODUCE THE MOST INTENSIVE AND EFFICIENT USE OF THE 3.7-4.2 GHZ BAND, WHILE ENSURING THAT ADEQUATE C-BAND CAPACITY REMAINS AVAILABLE FOR CRITICAL SATELLITE SERVICES**

Working with Intelsat, SES and Telesat, Eutelsat is now convinced that a market based approach that is led by an alliance of C-band satellite operators provides by far the most efficient and effective mechanism to repurpose a major portion of the 3.7-54.2 GHz band for terrestrial wireless services while ensuring that the important needs of C-band satellite consumers are given full consideration. The C-band Alliance will be able to maximize the amount of C-band spectrum that can be made available for terrestrial wireless services and expedite the clearing of that spectrum for mobile use. The Alliance will also be able to ensure that adequate C-band spectrum continues to be maintained for satellite services to ensure that the needs of its members' customers are satisfied.

In expressing support for the use of a market based approach to repack the 3.7-4.2 GHz band, Eutelsat acknowledges that it has adjusted its position since it filed its previous comments



with the Commission.<sup>1</sup> The *NPRM*, however, incorrectly characterizes Eutelsat’s prior comments. Specifically, Eutelsat never suggested that a market-based approach “will not result in the most efficient use of the band.”<sup>2</sup> Eutelsat’s references to “efficiency” in its reply comments solely addressed Eutelsat’s observation that C-band satellite services provide by far the most *efficient* and reliable means to distribute video programming over large areas to television stations, cable operators, and others.<sup>3</sup>

The Commission seems to acknowledge this point, observing in the *NPRM* that C-band satellite service “*is by far the best approach for broadcast distribution*”<sup>4</sup> and is therefore predominantly used in the United States for the “delivery of programming content to television and radio broadcasters, including transportable antennas used to cover live news and sports events, cable television and small master antenna systems, as well as the backhaul of telephone and data traffic.”<sup>5</sup>

Despite the Commission’s recognition of the tremendous efficiencies provided by C-band satellites for video distribution services, the *NPRM* seeks additional comment on whether there are “alternative technologies available that could wholly or partially replace the services provided by FSS without significant disruption to existing customers?”<sup>6</sup> Although other services—such as

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<sup>1</sup> See Comments of Eutelsat S.A., GN Docket 18-122 (May 31, 2018); Reply Comments of Eutelsat S.A., GN Docket No. 17-183 (Nov. 15, 2017) (“*Eutelsat Reply Comments*”).

<sup>2</sup> *NPRM*, ¶ 68, n.114 (*citing Eutelsat Reply Comments* at 6-7).

<sup>3</sup> *Eutelsat Reply Comments* at 6-7.

<sup>4</sup> *NPRM*, ¶ 59 (*emphasis added*).

<sup>5</sup> *Id.*, ¶ 10.

<sup>6</sup> See *id.*, ¶ 57.

fiber—could be used to replicate the video distribution services provided by C-band satellite services, their use would be vastly more expensive, much less reliable, and entirely impractical in non-urban areas. Therefore such options would not benefit the existing users of C-band satellite services, or the public, which depend on the video programming and other information services delivered by C-band.

Eutelsat did express concern in its prior comments that the specific needs of individual users of C-band satellite services must be taken into consideration in any market based process to ensure that those entities that want (or must) continue to use C-band satellite services for their communications needs are able to continue to do so.<sup>78</sup> Working with the Alliance, Eutelsat now believes that an appropriate balance will be achieved between the transition of C-band spectrum for wireless services and expanding the capacity of the remaining C-band satellite spectrum to ensure that adequate throughput remains available for existing and future customers that depend on C-band satellite distribution for critical communications.

## **II. C-BAND SATELLITE OPERATORS POSSESS THE APPROPRIATE INCENTIVES TO PRODUCE AN EQUITABLE AND EFFICIENT RESULT**

The *NPRM* explores at length the numerous competing economic incentives that may exist for C-band satellite operators with respect to the identification and clearing of C-band satellite spectrum for terrestrial wireless use. On the one hand, the *NPRM* theorizes that C-band satellite operators may try to charge too much in a secondary market process for the rights to C-band

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<sup>7</sup> See *id.*, ¶ 83 (referencing Eutelsat’s earlier concern that a market based approach may not take into sufficient account the interests of protected incumbent earth stations.)

<sup>8</sup> *Eutelsat Reply Comments* at 5 (observing that, under the Intel/Intelsat’s proposals, “the interests of the most important stakeholders – *i.e.*, the U.S. entities that rely on C-band satellite services to support critical communications – seem to be excluded from the decision making process”).

spectrum, which the *NPRM* characterizes as the “hold out” problem.<sup>9</sup> The *NPRM* speculates that this might potentially result in less C-band spectrum being transitioned to mobile wireless use. T-Mobile makes a similar argument, asserting that a market-based approach “will likely result in inefficient reallocation of spectrum”<sup>10</sup> because satellite operators “could choose to limit the amount of spectrum available for flexible use in order to increase their profits.”<sup>11</sup>

On the other hand, the *NPRM* speculates that the C-band satellite operators may have the directly opposite incentive to convert *too much* C-band satellite spectrum to mobile wireless use in order to make C-band satellite spectrum increasingly scarce and the cost of the C-band satellite capacity increasingly high.<sup>12</sup>

In addition to being in direct conflict with each other, these theories cannot survive economic scrutiny. The first theory—that satellite operators will charge too much for the spectrum—disregards the fact that, although spectrum is a scarce resource, there are other parties that have comparable mid-band spectrum available for sale—thus limiting the prices that satellite operators could charge. In fact, the strict limits on the prices that wireless carriers will pay for mid-band spectrum is evidenced by the fact that similar spectrum assets appear to have long been available for sale from existing terrestrial licensees without resulting in the consummation of transactions.

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<sup>9</sup> *NPRM*, ¶ 59.

<sup>10</sup> *Id.*, ¶ 81 (*quoting* Reply Comments of T-Mobile U.S.A., Inc., GN Docket 17-183, at 14-15 (Nov. 15, 2017) (“*T-Mobile Reply Comments*”)).

<sup>11</sup> *See id.*, ¶ 83 (*citing T-Mobile Reply Comments* at 15).

<sup>12</sup> *See id.*

The second theory—that satellite operators will convert too much of the 3.7-4.2 GHz band—disregards the fact that Eutelsat is committed to ensuring service continuity for its customers and the costs of doing so will increase significantly the greater the amount of spectrum is repurposed. The other Alliance members have expressed this same commitment regarding their customers. These commitments will serve to constrain the ability of the satellite operators to repurpose spectrum.

The *NPRM* acknowledges that these competing factors create opposite incentives for FSS licensees.<sup>13</sup> The first group provides an incentive to repurpose less than the efficient amount of spectrum while the second group creates an incentive to repurpose more than the efficient amount. Given these competing factors, the Commission should recognize that an appropriate balance of incentives does exist and C-band satellite operators should therefore be permitted to implement a market based approach that productively employs these competing economic incentives to produce an economically efficient result.

In authorizing the C-band satellite operators to implement a secondary markets approach, the Commission obviously should remain involved in overseeing the repacking process. As the *NPRM* appropriately anticipates, the Commission can confirm the outcome of the secondary market negotiations—likely using the terrestrial mobile license application as the vehicle.<sup>14</sup>

Permitting an alliance of C-band satellite operators to jointly pursue a market based approach would also be consistent with the theories of Hal Varian that are briefly addressed in the

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<sup>13</sup> See *id.*, ¶ 59.

<sup>14</sup> See *id.*, ¶ 87.

*NPRM*.<sup>15</sup> Varian argued that, in games involving private contributions to a public good, less of the public good will be supplied if the contributing parties make their contributions sequentially as compared to if they make their offerings simultaneously. Pursuant to this theory, allowing the alliance of C-band satellite operators to work together (*i.e.*, simultaneously) in deciding how much spectrum can be cleared (and the required repacking costs to do so) will increase the amount of spectrum that is ultimately made available. In contrast, any approach that tries to make the satellite operators (or their end user customers) compete in their determinations regarding how much spectrum should be clear will result in a lesser amount of spectrum being made available for mobile wireless services, thereby failing to serve the public interest.

### **III. THE C-BAND ALLIANCE’S SECONDARY MARKET PROPOSAL WOULD FULFILL THE GOALS OF THE MOBILE NOW ACT**

The Mobile Now Act calls for the identification of at least 255 MHz of spectrum for mobile and fixed wireless broadband use.<sup>16</sup> This includes:

- 100 megahertz below 8000 MHz shall be identified for unlicensed use,<sup>17</sup>
- 100 megahertz below 6000 MHz shall be identified for use on exclusive, licensed basis for commercial mobile use<sup>18</sup> and
- 55 megahertz below 8000 MHz shall be identified for licensed, unlicensed, or a combination of uses.<sup>19</sup>

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<sup>15</sup> See *id.*, ¶ 62 (*citing* Varian, Hal, “Sequential contributions to public goods”, *Journal of Public Economics*, Volume 53, Issue 2, February 1994, Pages 165-186, Sections 5-6).

<sup>16</sup> See *NPRM*, ¶ 7 (*citing Mobile Now Act* § 603(a)(1)).

<sup>17</sup> *Id.* § 603(a)(2)(A).

<sup>18</sup> *Id.* § 603(a)(2)(B).

<sup>19</sup> *Id.* § 603(a)(2)(C).

The Alliance is currently proposing to clear 200 MHz of spectrum (with a 20 MHz guard band) for licensed commercial mobile use. In addition, Eutelsat is exploring the potential opportunities that may exist with respect to making a portion of the C-band satellite uplink band at 5.925-6.425 GHz available on a shared basis for unlicensed use. All of this could be accomplished while retaining incumbent use of the C-band uplink spectrum and much of the C-band downlink spectrum for satellite communications services. Therefore, the Commission should endorse the secondary market approach put forward by the C-band Alliance in order to achieve the goals of the Mobile Now Act.

#### **IV. THE COMMISSION SHOULD PERMIT THE C-BAND ALLIANCE TO ORGANIZE ITSELF (AS IT ALREADY HAS) AND MANAGE THE SECONDARY MARKET PROCESS**

The Commission should not impose qualification requirements on the Alliance, such as mandating that participating operators provide C-band satellite service “throughout the lower 48 states.”<sup>20</sup> Alliance members such as Eutelsat do have satellites providing CONUS services to consumers in the United States. Both these satellites and Eutelsat’s customers will be affected directly by the repacking process. Therefore, Eutelsat’s participation in this process is both necessary and appropriate. The Commission should refrain from adopting rules that may inadvertently delay the secondary market process, such as creating an open legal question regarding whether some of the participating C-band satellite operators provide services “throughout” the United States, or in relevant portions of CONUS.

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<sup>20</sup> See *NPRM*, ¶ 74.

The Commission should also permit the Alliance to pursue a market based approach even if a C-band satellite operator serving some portion of the United States is not a member of the Alliance.<sup>21</sup> The Alliance already includes the four companies that are responsible for nearly all of the C-band satellite communications services that are provided in CONUS. Others that have CONUS coverage would be eligible to join the Alliance. To the extent that any such services may be provided by other companies, the Commission should require that all C-band satellite operators comply with the procedures and timelines that are developed by the Alliance for the clearing of the identified spectrum, the reimbursement of relocation costs, and the identification of certain earth stations that will continue to be protected.

The Commission should also permit the Alliance to negotiate with the wireless carriers on the most optimal block size for the spectrum to be cleared.<sup>22</sup> Consistent with a market-based process, the wireless carriers receiving the spectrum could then aggregate or disaggregate the spectrum as desired.

The Commission should also refrain from attempting to micromanage the contractual arrangements that exist between C-band satellite operators and their customers. For example, the *NPRM* seeks comment on whether the Commission should require FSS space station licensees that are going to cease transmitting on a primary basis to notify earth stations receiving those signals.”<sup>23</sup> Such micromanagement of the reconfiguration process is unnecessary. Eutelsat will keep its customers fully apprised of all steps to be taken regarding reconfiguration. Underlying this is Eutelsat’s clear intention that, following the repacking, it will continue to serve its customers, by

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<sup>21</sup> *See id.*, ¶ 76.

<sup>22</sup> *See id.*, ¶ 136.

<sup>23</sup> *See id.*, ¶ 85.

maintaining the same supply and quality of service as it does today, albeit using less spectrum. Eutelsat believes that this same intention is shared by the other Alliance members.

The Commission should also refrain from requiring satellite operators and their customers to supply more granular information regarding the types of content and uses that exist, and the amount of spectrum that these uses require.<sup>24</sup> The *NPRM* identifies as examples, information on the type of content (*i.e.*, audio or video feeds), transponder loading, the total bandwidth occupied by particular users or content feeds, the identity of the content provider, and the frequency of occurrence of various periodic uses.<sup>25</sup> Such an examination would require the disclosure of information that is highly proprietary both to the C-band satellite operators and their customers and would necessitate a separate confidentiality process for each operator and for many of its customers. The substantial delay that would result in developing such a framework significantly outweighs any illusory benefits that may be provided.

Further, the Commission should not attempt to develop a system in which relocation and reimbursement for the repacking process is negotiated directly with the customers of C-band satellite operators.<sup>26</sup> As the Commission is aware, its earth station licensing records do not reflect all authorized uses of C-band spectrum, including uses for receive-only services. Further, such a negotiation process would be highly complex, producing significant hold out, rent seeking, and other organizational and economic problems, some of which are acknowledged in the *NPRM*.<sup>27</sup> Finally, although such an approach would potentially address the ability of certain customers to

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<sup>24</sup> See *id.*, ¶ 42.

<sup>25</sup> See *id.*

<sup>26</sup> See *id.*, ¶ 65.

<sup>27</sup> See *id.*



receive satellite services, it would not address the rights of satellite operators to provide services, both to themselves and to additional customers.

## **V. THE COMMISSION SHOULD NOT ATTEMPT TO USE AN AUCTION APPROACH TO CLEAR C-BAND SATELLITE SPECTRUM**

The *NPRM* explores several approaches that might be considered in an attempt to auction rights to portions of the 3.7-4.2 GHz band. As the *NPRM* appears to acknowledge, each of these options has significant flaws and, in some cases, would be entirely unworkable. For example, the use of an overlay auction would give wireless carriers insufficient incentive to negotiate in good faith with incumbent spectrum users (as evidenced by previously authorized overlay auctions). Instead, they could wait until the conclusion of the negotiation period until the satellite operators are required to relinquish their spectrum.<sup>28</sup> The use of an overlay auction would therefore result in significant gamesmanship and speculation by auction winners, while delaying substantially the conversion of any portion of the 3.7-4.2 GHz band for terrestrial wireless services.

In contrast, an incentive auction could not work because each satellite operator and earth station licensee is permitted to use all of the 3.7-4.2 GHz band, the former across the entire United States.<sup>29</sup> As the *NPRM* acknowledges “because all FSS licensees have equal, nonexclusive rights to the entire band under Part 25 of our rules, they cannot compete in the same way that broadcast television licensees did in the broadcast incentive auction.”<sup>30</sup> Therefore, any agreement by one

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<sup>28</sup> See *id.*, ¶¶ 100-102.

<sup>29</sup> See *id.*, ¶¶ 103-105.

<sup>30</sup> *Id.*, ¶ 59.

operator or licensee to relinquish its spectrum rights would not free up any spectrum for use by a wireless carrier.

A capacity auction would have the same problem.<sup>31</sup> Any capacity relinquished by any satellite operator or earth station licensee would not clear any spectrum for other uses. Finally, a hybrid approach would combine many of the problems with the other proposed approaches rather than resolve any of them.<sup>32</sup> Therefore, the Commission should refrain from employing an auction approach to reassign spectrum rights within the 3.7-4.2 GHz band.

## **VI. THE COMMISSION SHOULD LIFT ITS FREEZE ON NEW C-BAND EARTH STATION AND SATELLITE AUTHORIZATIONS**

Leading up to the adoption of the *NPRM* by the Commission, the International Bureau imposed a freeze on applications for new C-band satellites<sup>33</sup> and earth stations<sup>34</sup> in order to prevent the filing of speculative applications for new systems the reconfiguration of which would require reimbursement. The *NPRM* proposes an exception to the freeze on satellites, however, in the event “authorization of such space stations would promote more efficient use of the band.”<sup>35</sup>

As a preliminary point, an exception to the freeze will be needed both for additional satellites and for the additional earth stations that will be pointed toward these satellites in order to maintain some of the current throughput capacity of C-band spectrum users, while using less spectrum.

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<sup>31</sup> See *id.*, ¶¶ 106-110.

<sup>32</sup> See *id.*, ¶¶ 111-115.

<sup>33</sup> See *id.*, ¶ 46 (addressing C-band space station authorizations).

<sup>34</sup> See *id.*, ¶ 30 (addressing earth station licenses).

<sup>35</sup> See *id.*, ¶ 46.

More importantly, as the NPRM acknowledges, C-band satellite services continue to serve an important role as “by far the best approach” for the nationwide distribution of news, information and other video programming services. The important benefits of C-band satellite services should not be withheld from additional users, particularly those in rural and remote areas. Therefore, the Commission should permit the licensing of new earth stations and satellites, with the understanding that after some point, any costs incurred by licensees of these systems in reconfiguring them for the bandwidth that ultimately remains for C-band satellite services will not be reimbursed through the secondary market process and they may not be protected from interference from 5G operations in repurposed spectrum. Such an approach would promote the public interest while ensuring that the secondary market process that has been proposed by the C-band Alliance is not disrupted by speculative interests.

## **VII. CONCLUSION**

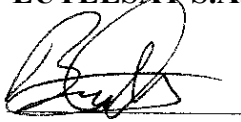
Eutelsat strongly supports the use of a secondary market approach by the C-band Alliance to make available a significant portion of the 3.7-4.2 GHz band for terrestrial wireless services, while employing measures to ensure that the satellite throughput capacity of the upper portion of the 3.7-4.2 GHz band remains effectively the same after the clearing process to serve the existing and future needs of entities that rely on C-band satellite services for their internal communications needs and to provide important video and informational programming services to consumers. The Commission should therefore authorize the C-band Alliance to carry out the secondary market

reconfiguration process that the Alliance members have already taken significant measures to implement.

Respectfully submitted,

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